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EXAMINER	
SALTARELLI, DOMINIC D	

ART UNIT	PAPER NUMBER
2623	

DATE MAILED: 04/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/917,639	CHEUNG ET AL.	
	Examiner	Art Unit	
	Dominic D. Saltarelli	2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *01 February 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-107* is/are pending in the application.

4a) Of the above claim(s) *4-25,34-71,86-88 and 96-99* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3,26-33,72-85,89-95 and 100-107* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 1/14/02, 2/19/02, 3/6/03
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Specification

1. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

2. The abstract of the disclosure is objected to because the phrase "This invention" found in lines 1, 10, and 12 should be removed. Correction is required. See MPEP § 608.01(b).

Election/Restrictions

3. Claims 4-25, 34-71, 86-88, and 96-99 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to nonelected species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on February 1, 2006.

4. Applicant's election without traverse of specie 3 [configuration 3] in the reply filed on February 1, 2006 is acknowledged. However, while the examiner agrees that claims 72, 73, 89-95, and 100-103 are also generic, and thus will be examined, claims 96-99, which describe accessing all anti-latency streams simultaneously, are directed to

configuration 4, as described in applicant's specification on page 18, lines 5-17. Further, claims 41-57, which are illustrated in fig. 10, are directed to configuration 5, as described in applicant's specification on page 7, lines 10-12 and page 21, lines 1-19.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 33 and 85 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. A figure is not an acceptable claim limitation.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1-3, 73, 79-81, and 89-91 are rejected under 35 U.S.C. 102(b) as being anticipated by Ganek et al. (5,724,646) [Ganek].

Regarding claims 1 and 79-80, Ganek discloses a system for transmitting data over a network to clients having a latency time to initiate transmission of

said data to the client (said latency time represented by $T_{lead\text{-}in}$, see col. 3 line 66 – col. 4 line 32), including:

an anti-latency signal generator (the generators themselves are not specified, as they are well known components, col. 4, lines 43-51) for generating anti-latency data streams containing a leading portion of data for receipt by a client (secondary channels deliver the beginning portion of available programs, col. 6, lines 54-62 and col. 8, lines 7-9); and

an interactive signal generator for generating interactive data streams containing a remaining portion of said data for the client to merge into after receiving a portion of an anti-latency data stream (the streams sent to a user over the primary channels, col. 6, lines 54-62 and col. 7 line 50 – col. 8 line 4).

Regarding claims 2 and 81, Ganek discloses the system of claims 1 and 79, wherein said data is fragmented in to K segments each requiring a time T to transmit over the network (the streams are MPEG compressed streams, wherein the TS packets of an MPEG stream are all of equal size, and thus requiring an equal amount of time to transmit over the network, col. 6, lines 12-25, and any arbitrarily selectable number of TS packets represents a segment, wherein K is the total number of these segments), the anti-latency data streams include M anti-latency data streams (however many secondary channels are used equals M) and the interactive data streams include N interactive data streams (and however many primary channels are used equals N).

Regarding claim 3, Ganek discloses the system of claim 1, wherein the anti-latency data streams contain the leading portion of said data only and the interactive data streams contain a whole set of said data (col. 6, lines 54-62).

Regarding claim 89, Ganek discloses the system of claim 2, including a receiver for receiving data being transmitted over a network to a client (fig. 1, viewbox 160) including a processor for raising a request for said data (fig. 1, DSS 150, col. 5, lines 8-47) and a connector for connecting the client to the M anti-latency data streams and receiving data in the M anti-latency data streams (fig. 4, tuner 110, col. 5, lines 30-32).

Regarding claim 90, Ganek discloses the receiver of claim 89, wherein the connector is connected the N interactive data streams after all data in the M anti-latency data streams is received by the receiver (col. 8, line 66 – col. 9 line 8).

Regarding claim 91, Ganek discloses the receiver of claim 89, wherein the data in the leading portion is received sequentially (col. 8, lines 7-30, the data in each secondary channel is received sequentially [repeatedly]).

9. Claims 82-84 rejected under 35 U.S.C. 102(b) as being anticipated by Kermode et al. (6.018,359) [Kermode].

Regarding claim 82, Kermode discloses a system for transmitting data over a network to at least one client including at least one anti-latency signal generator for generating a plurality of anti-latency data streams (fig. 1), wherein the anti-latency data streams include:

M anti-latency data streams from 1 to M (figs. 3 and 4) wherein an m^{th} anti-latency data stream has F_m segments, and F_m is an m^{th} Fibonacci number; and wherein said F_m segments are repeated continuously within the m^{th} anti-latency data stream (the lengths are relative to each other based on the Fibonacci number sequence, and the "segments" claimed are a unit of data equal to the size of the segment in the first channel, thus subsequent channels have their equivalent Fibonacci number worth of said segments, col. 6, lines 45-60).

Regarding claim 83, Kermode discloses the system of claim 82, wherein the client is connected to the m^{th} and $(m+1)^{th}$ anti-latency data streams when the client raises a request for said data, the data in the m^{th} and $(m+1)^{th}$ anti-latency data streams is buffered in the client, and the client is subsequently connected to successive anti-latency data streams until all data is received by the client (col. 5 line 59 – col. 6 line 13).

Regarding claim 84, Kermode discloses the system of claim 82, wherein m starts from 1 (col. 6, lines 45-60, and shown in figs. 3-4).

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

11. Claims 26-32, 75-78, 92-95, and 100-107 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ganek in view of Kermode.

Regarding claim 26, Ganek discloses the system of claim 2, wherein each of the N interactive data streams are repeated continuously within said interactive data streams (col. 3, lines 50-65) and wherein each successive interactive data stream is staggered by an interactive time interval = KT/N (col. 7 line 49 – col. 8 line 4, wherein the time interval, TSTAG is 10 minutes, which is equal to the total length of the video (KT) of 1 hour (60 minutes) divided by the number of interactive streams (6), as 10 = 60/6).

Ganek fails to disclose the anti-latency data streams 1 to M are generated such that an m^{th} anti-latency data stream has F_m segments, wherein F_m is an m^{th} Fibonacci number and the F_m segments are repeated continuously within the m^{th} anti-latency data stream.

In an analogous art, Kermode teaches a video distribution system (col. 5, lines 15-25) wherein the leading portions of a distributed video are provided over a plurality of channels (col. 5 line 59 – col. 6 line 13), wherein each successive channel has an amount of data repeated within it according to a Fibonacci

sequence (col. 6 line 45 – col. 7 line 20, wherein the "segments" listed are equivalent to the "frames" denoted in applicant's disclosure, figs. 6 and 7, thus the number of any data unit per "segment" is the Fibonacci number of the equivalent stream), ensuring that playback does not occur before the beginning of a segment is loaded (col. 6, lines 38-44 and col. 7 lines 21-44) while more efficiently utilize available buffer space (col. 7 line 66 – col. 8 line 18).

It would have been obvious at the time to a person of ordinary skill in the art to modify the system disclosed by Ganek to generate the anti-latency streams such that an m^{th} anti-latency data stream has F_m segments, wherein F_m is an m^{th} Fibonacci number and the F_m segments are repeated continuously within the m^{th} anti-latency data stream, as taught by Kermode, for the benefit of ensuring that playback does not occur before the beginning of a segment is loaded while efficiently utilizing available buffer space when accessing said streams.

Regarding claim 27, Ganek and Kermode disclose the system of claim 26, wherein the client is connected to the m^{th} and $(m+1)^{th}$ anti-latency data streams when the client raises a request for said data, the data in the m^{th} and $(m+1)^{th}$ anti-latency data streams is buffered in the client, and the client is subsequently connected to successive anti-latency data streams until all data in the leading portion is received by the client (Kermode, col. 5 line 59 – col. 6 line 13).

Regarding claim 28, Ganek and Kermode disclose the system of claim 27, wherein the client is connected to one of the N interactive data streams after all data in the leading portion is received by the client (Ganek teaches once the receiver has received the content of the secondary channel, it switches over to a primary channel, col. 8 line 66 – col. 9 line 8).

Regarding claim 29, Ganek and Kermode disclose the system of claim 26, wherein each of the N interactive data streams contains the whole set of said data having K segments (Ganek teaches the video program is provided on each primary channel, col. 6, lines 54-62).

Regarding claim 30, Ganek and Kermode disclose the system of claim 26, but fail to disclose each of the N interactive data streams contain the remaining portion of said data only.

However, Kermode further discloses placing only the remaining portion of video data on a stream to which a receiver merges into after receiving the initial streams (see fig. 4), maintaining a minimum needed bandwidth for each channel (col. 9, lines 3-9, bandwidth requirements are reduced when the amount of data transmitted per channel is reduced).

It would have been obvious at the time to a person of ordinary skill in the art to modify the system of Ganek and Kermode to place only the remaining portion of said data onto each of the N interactive data streams, as taught by

Kermode, for the benefit of maintaining a minimum needed bandwidth for each channel and reducing the overall bandwidth needed by the system.

Regarding claim 31, Ganek and Kermode disclose the system of claim 26, wherein $F_M \geq 2K/N$ (since K is any arbitrarily selectable number of TS packets, a value of K = 0.5N satisfies the equation for any positive whole integer value of M).

Regarding claim 32, Ganek and Kermode disclose the system of claim 26, wherein m stars from 1 (Kermode, col. 6, lines 45-60, wherein the series of f(n) starts with 1, thus n, the segment size, starts with one).

Regarding claim 73, Ganek and Kermode disclose the system of claim 2, wherein a portion of data in the leading portion is pre-fetched in the client (Kermode, col. 8 line 66 – col. 9 line 23).

Regarding claims 75 and 104, Ganek discloses a system for transmitting data over a network to at least one client having a latency time to initiate transmission of said data to the client (fig. 1), including:

an anti-latency signal generator (the generators themselves are not specified, as they are well known components, col. 4, lines 43-51) for generating anti-latency data streams containing a leading portion of data for receipt by a

client (secondary channels deliver the beginning portion of available programs, col. 6, lines 54-62 and col. 8, lines 7-9); and

an interactive signal generator for generating interactive data streams containing a remaining portion of said data for the client to merge into after receiving a portion of an anti-latency data stream (the streams sent to a user over the primary channels, col. 6, lines 54-62 and col. 7 line 50 – col. 8 line 4).

Ganek fails to disclose a buffer in the client for pre-fetching the leading portion in the client as pre-fetched data.

In an analogous art, Kermode discloses pre-fetching the leading portion of video data in a client buffer (col. 9, lines 10-23), reducing the bandwidth requirements for transmitting the remaining portions of the video (col. 8 line 66 – col. 9 line 9).

It would have been obvious at the time to a person of ordinary skill in the art to modify the system disclosed by Ganek to include a buffer in the client for pre-fetching the leading portion in the client as pre-fetched data, as taught by Kermode, for the benefit of reducing the bandwidth requirements for transmitting the remaining portions of the data.

Regarding claims 76-78 and 105-107, Ganek and Kermode disclose the system of claims 75 and 104, but fail to disclose the pre-fetched data is refreshed during a refresh time period which is an off-peak period or during a refresh time period once per day.

Examiner takes official notice that updates to downloaded data occur during refresh time periods which are during off-peak hours and occur once per day. An example of such systems include the updates of operating system software in set top boxes and the daily updating of electronic program guide data, wherein off peak hours are used to conserve bandwidth, as an off peak hour is when available bandwidth is underutilized and once per day updates ensure the data is regularly updated.

It would have been obvious at the time to a person of ordinary skill in the art to modify the system disclosed by Ganek and Kermode to include the pre-fetched data is refreshed during a refresh time period which is an off-peak period or during a refresh time period once per day, providing the benefit of regularly updated content using bandwidth that is otherwise underutilized.

Regarding claim 92, Ganek discloses the receiver of claim 89, but fails to disclose the receiver connects to two of the anti-latency streams simultaneously.

In an analogous art, Kermode teaches simultaneously connecting to two anti-latency streams in a video on demand server (col. 5 line 59 – col. 6 line 13) for the benefit of asynchronous downloading of segments, shortening a user's wait time for said segments (col. 6, lines 14-36).

It would have been obvious at the time to a person of ordinary skill in the art to modify the receiver of Ganek to include connecting to two of the anti-

latency streams simultaneously, as taught by Kermode, for the benefit of shortening a user's wait time for data.

Regarding claim 93, Ganek and Kermode disclose the receiver of claim 92, including a buffer for buffering data in the two anti-latency data streams connected to the client that is received by the client sequentially (Kermode, buffers 117, col. 5, lines 34-48).

Regarding claims 94 and 95, Ganek and Kermode disclose the receiver of claim 93, wherein the buffer includes a random access memory and a computer hard disk (Kermode, col. 5, lines 34-48).

Regarding claim 100, Ganek discloses the receiver of claim 89, but fails to disclose a portion of data in the M anti-latency data streams is pre-fetched in the client as pre-fetched data.

In and analogous art, Kermode teaches pre-fetching the leading portion of video data in a client buffer (col. 9, lines 10-23), reducing the bandwidth requirements for transmitting the remaining portions of the video (col. 8 line 66 – col. 9 line 9).

It would have been obvious at the time to a person of ordinary skill in the art to modify the receiver disclosed by Ganek to include pre-fetching a portion of data in the anti-latency streams, as taught by Kermode, for the benefit of

reducing the bandwidth requirements for transmitting the remaining portions of the data.

Regarding claims 101-103, Ganek and Kermode disclose the receiver of claim 100, but fail to disclose the pre-fetched data is refreshed during a refresh time period between either 01:00-06:00 or 10:00-15:00.

Examiner takes official notice that updates to downloaded data occur during refresh time periods which are during off-peak hours. An example of such systems include the updates of operating system software in set top boxes and the updating of electronic program guide data, wherein off peak hours are used to conserve bandwidth, as an off peak hour is when available bandwidth is underutilized.

It would have been obvious at the time to a person of ordinary skill in the art to modify the system disclosed by Ganek and Kermode to include the pre-fetched data is refreshed during a refresh time period which is an off-peak period, providing the benefit of regularly updated content using bandwidth that is otherwise underutilized.

12. Claims 72 and 74 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ganek in view of Abbott et al. (6,141,324) [Abbott].

Regarding claims 72 and 74, Ganek discloses the system of claim 2, wherein each of the K data segments contains a head portion and a tail portion

(an inherent feature of any sequence of more than one packet, as the first packet of the sequence sent is in the head portion and the last packet of the sequence sent is in the tail portion). However, Ganek fails to disclose the head portion contains a portion of the data of the tail portion of the immediate preceding segment to facilitate merging of the K data segments when received by the client.

In an analogous art, Abbott teaches a data transmission system (col. 4 line 64 – col. 5 line 12) wherein messages (sequences of packets) contain a portion of the data of the tail portion of the immediate preceding message (see fig. 11), taking advantage of "forward error correction" which prevents data loss (col. 12, lines 1-12).

It would have been obvious at the time to a person of ordinary skill in the art to modify the system disclosed by Ganek to include in the head portion of a segment, a portion of the data of the tail portion of the immediate preceding segment, as taught by Abbott, for the benefit of "forward error correction" which prevents data loss from dropped or otherwise missed packets.

Conclusion

13. The following are suggested formats for either a Certificate of Mailing or Certificate of Transmission under 37 CFR 1.8(a). The certification may be included with all correspondence concerning this application or proceeding to establish a date of mailing or transmission under 37 CFR 1.8(a). Proper use of this procedure will result in such communication being considered as timely if the established date is within the required period for reply. The Certificate should be signed by the individual actually depositing or transmitting the correspondence or by an individual who, upon information and belief, expects the correspondence to be mailed or transmitted in the normal course of business by another no later than the date indicated.

Certificate of Mailing

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Please refer to 37 CFR 1.6(d) and 1.8(a)(2) for filing limitations concerning facsimile transmissions and mailing, respectively.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dominic D. Saltarelli whose telephone number is (571) 272-7302. The examiner can normally be reached on Monday - Friday 7:00am - 4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Miller can be reached on (571) 272-7353. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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DS

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